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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,642	10/01/2001	Kenji Nagai	SIMTEK6218	3686

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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,642

Applicant(s)

NAGAI, KENJI

Examiner

Dang D Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 2-9 and 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10-19 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 4/3/2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. Applicant's arguments, see Appeal Brief, filed 3/4/04, with respect to the rejection(s) of claim(s) 1, 10-19, and 23-30 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nagashima et al. (5,353,658) and DeBello (4,665,320).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by DeBello (4,665,320).

Regarding claims 1 and 16, DeBello shows a rotating electrical machine (Figure 3) comprised of an outer housing assembly (26, 20, and 44) and a rotor (32) including a rotor shaft (38) journaled therein, said rotor shaft having a drive portion (58) extending outwardly beyond said outer housing assembly for driving relation with another shaft (one that supports the flywheel of the engine), said outer housing assembly being comprised of a stator shell (20) closed at opposite ends thereof by first (44) and second (26) end caps, said first end cap providing an anti-friction bearing (46) journaling said rotor shaft adjacent said drive portion with said drive portion extending through said first end cap, said first end cap having attachment means (through holes for bolts and plates between 44 and 4) for providing a mounting connection to a body (6) that journals the another shaft, said stator shell carrying a plurality of permanent magnets (66, 70), said rotor having a plurality of windings (34) cooperating with said permanent magnets, a commutator (36) fixed to said rotor shaft at an end thereof spaced from said drive portion of said rotor shaft and in electrical communication with said rotor windings, fasteners (bolts) for affixing said end caps to each other and to opposite ends of said stator shell, a brush carrier (81) fixed to said stator shell and carrying brushes (79) cooperating with said commutator, and a plain bearing (28) carried by said second end cap for journaling the end of said rotor shaft spaced from said drive portion.

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5. Claims 1, 10-13, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagashima et al. (5,353,658).

Regarding claim 1, Nagashima et al. shows a rotating electrical machine (Figure 1) comprised of an outer housing assembly (middle portion) and a rotor including a rotor shaft (2a) journaled therein, said rotor shaft having a drive portion (2b) extending outwardly beyond said outer housing assembly for driving relation with another shaft (8), said outer housing assembly being comprised of a stator shell closed at opposite ends thereof by first (left side) and second (right side) end caps, said first end cap providing an anti-friction bearing (ball bearing near 2b) journaling said rotor shaft adjacent said drive portion with said drive portion extending through said first end cap, said first end cap having attachment means (through hole for bottom screw) for providing a mounting connection to a body (1a) that journals the another shaft (8), said stator shell carrying a plurality of permanent magnets (top and bottom of rotor), said rotor having a plurality of windings cooperating with said permanent magnets, a commutator (right side, below 2) fixed to said rotor shaft at an end thereof spaced from said drive portion of said rotor shaft and in electrical communication with said rotor windings, fasteners (bottom screw) for affixing said end caps to each other and to opposite ends of said stator shell, a brush carrier fixed to said stator shell and carrying brushes (right side) cooperating with said commutator, and a plain bearing (left side) carried by said second end cap for journaling the end of said rotor shaft spaced from said drive portion.

Regarding claim 10, it is noted that Nagashima et al. also shows the end caps (left and right) being fixed to each other by threaded fasteners (bottom bolt) and the stator shell being sandwiched therebetween in Figure 1.

Regarding claim 11, it is noted that Nagashima et al. also shows the brush carrier being fixed to the second end cap (right side).

Regarding claim 12, it is noted that Nagashima et al. also shows the second end cap being affixed (by bolt) to a body (1a) that journals the another shaft (8).

Regarding claim 13, it is noted that Nagashima et al. also shows the machine comprising a starter motor for starting an internal combustion engine and the another shaft comprising a shaft associated with said engine (through gears 3 and 4).

Claims 16 and 17 are similar to claims 1 and 10, respectively. As a result, they are also rejected.

6. Claims 14, 15, 18, 19, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi (4,897,571).

Regarding claims 14 and 18, Nagashima et al. shows all of the limitations of the claimed invention except for the stiffening ribs.

Isozumi shows the stiffening ribs (21a) for the purpose of strengthening the end cap.

Since Nagashima et al. and Isozumi are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include the stiffening ribs as taught by Isozumi for the purpose discussed above.

Regarding claims 15 and 19, it is noted that Isozumi also shows the second end cap being formed with a mounting bracket (22) that is affixed to a body that journals the another shaft and at least some of the stiffening ribs (21a) are integral with the mounting bracket (22).

Regarding claim 30, it is noted that Nagashima et al. also shows the machine comprising a starter motor for starting an internal combustion engine and the another shaft (8) comprising a shaft associated with said engine (through gears 3 and 4).

7. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi as applied to claim 19 above, and further in view of Kakuda et al. (4,618,790).

Regarding claims 23 and 25, the machine of Nagashima et al. modified by Isozumi includes all of the limitations of the claimed invention except for the brush carrier carrying a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft.

Kakuda et al. shows the brush carrier (23) carrying a number of brushes (22) all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft for the purpose of providing electricity to the rotor coils.

(It is noted that in the art of motor and generator, it is well known to make the brush carrier with a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft as shown in Figure 16 of Moribayashi et al. (5,576,588)).

Since Nagashima et al., Isozumi, and Kakuda et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the brush carrier with a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft as taught by Kakuda et al. for the purpose discussed above.

Regarding claim 24, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to confine the brushes in an area that encompasses 90 degrees around the rotational axis of the rotor shaft, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi and Kakuda et al. as applied to claim 25 above, and further in view of Hefner (5,742,110).

Regarding claims 26-28, the machine of Nagashima et al. modified by Isozumi and Kakuda et al. includes all of the limitations of the claimed invention except for the

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four permanent magnets being formed from a high magnetic density material and the high magnetic density material comprising neodymium-iron-boron.

Hefner shows the permanent magnets being formed from a high magnetic density material and the high magnetic density material comprising neodymium-iron-boron for the purpose of increasing flux density.

Since Nagashima et al., Isozumi, Kakuda et al., and Hefner are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use neodymium-iron-boron magnets as taught by Hefner for the purpose discussed above.

Regarding claim 29, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to confine the brushes in an area that encompasses 90 degrees around the rotational axis of the rotor shaft, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Information on How to Contact USPTO

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

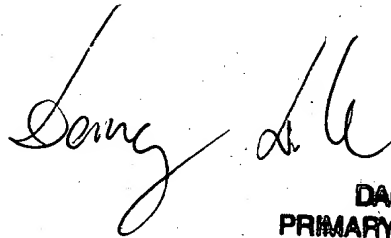
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/12/04



**DANGLE
PRIMARY EXAMINER**